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EXAMINER

TRUONG, LECHI

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PAPER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/017,495

Filing Date: December 14, 2001

Appellant(s): ZHAO ET AL.

For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 06/07/2006 appealing from the Office action mailed 09/07/2005.

**(1) Real Party in Interest**

The real party in interest for this appears is Borland Software Corporation. Rights in and to this application have been assigned to Borland.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings, which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

There are 24 claims pending in application, i.e. claims 1-24. The current status of the claims is as follows:

1. Claims canceled: none;
2. Claims withdraw from consideration, but not canceled: none;
3. Claims pending: 1-24;
4. Claims allowed: 3-8 and 11;
5. Claims rejected: 1, 2, 9, 10, and 12-24.

**(4) Status of Amendments After Final**

No amendment after final has been filed 06/03/2005.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Prior Art of Record**

Ben-Shachar et al (US. Patent 6,209,018 B1)

Emens et al (US. Patent 6,606,643 B1)

Java Reflective Broker

Arno (Load Balancing example)

Rawson et al (US. Patent 5,675,795)

Nelson et al (US. Patent 5,452,447)

Nessett et al (US. Patent 5,742,759)

**(8) Evidence Relied Upon**

No evidence is relied upon by the examiner in the rejection of the claims under appeal.

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

2. Claim 1, 14, 23, 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1).

3. **As to claim 1**, Ben-Shachar teaches the invention substantially as claimed including: a name service clusters (a service locator that maintains the name space of service instance, col 5, ln 65-67/the set of service locator, col 19, ln 51-55/ the service locator object, col 21, ln 60-65), invoking a cluster (col 6, ln 3-5), establishing name service clusters (col 6, ln 45-46/ col 19, ln 65-67), a unique object table (the RDBMS service, col 5, ln 65-67 to col 6, ln 1-5), object service server reference( the name “ RDBMS service”/ a service name / a set of properties for service, col 6, ln 1-10), establishing name service clusters for the object servers which each contain a unique object binding table( col 5, ln 65-67 to col 6, ln 1-10/ col 9, ln 26-32), in response to a request from client that invokes a cluster( col 9, ln 30-34/ col 11,ln 2-7/ col 12, ln 22-29), performing a load balance by having name service select an object server located in the invoked cluster (col 6, ln 12-17/ col 10, ln 62-66/ col 11, ln 3-7), a load balance (workload balancing, col 11, ln 12-18), a cluster component to invoked cluster to provide failover upon failure of the object server( col 3, ln 34-40/

col 21, ln 60-65/ col 28, ln 35-39 and ln 54-58), a selected object reference ( the service object handles, col 6, ln 5-9/col 8, ln 63-67/ reservation context, col 26, ln 22-30/ service object , and a set of properties for the service, col 6, ln 5-9), forwarding a selected object reference to a client upon completion of the loading balance ( col 6, ln 5-9/col 8, ln 63-67/ col 11, ln 8-15), server( server 88, Fig. 3), the selected object reference which was forwarded to the client( col 5, ln 60-67 to col 6, ln 3-9/ col 8, ln 63-67), communicating with a server associated with the selected object reference( col 9, ln 30-34/ col 10, ln 39-42/ col 26, ln 23-30), wherein the fault tolerance, the load balance and the failover are performed transparently( col 10, ln 3-7/ col 11, ln 60-63).

4. Ben-Shachar does not explicit teach permitting the client to communication with the server associated with the selected object reference which was forwarded to the clients, binding table. However, Emens teaches permitting the client to communication with the server associated with the selected object reference which was forwarded to the clients (sending a list of mirror servers at the host server, said response being sent from the host to the client, response including the list of mirror server... creating a plurality of mirror server requests at the client computer, each mirror server request corresponding to a mirror server on the list of mirror server... sending the plurality of mirror server requests over the network from the client computer to the corresponding mirror server, col 4, ln 35-45/ col 3, ln 37-45), binding table( address list 36, col 8, ln 52-54).

5. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar and Emens because Emens's permitting the client to communication with the server associated with the selected object reference which was forwarded to the clients would improve the efficiency of Ben-Shachar's system by allowing load balancing is accomplished without problems arise from client or name server caching.

6. **As to claim 14**, Ben-Shachar teaches each object server reference represents a single server (col 8, ln 66- 67 and col 9, ln 1).

7. **As to claims 23, 24**, they area apparatus claim of claim 1; therefore, they are rejected for the same reason as claim 1 above.

8. Claims 2, 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1), applied to claim 1 above, and further in view of JR (java Reflective Broker).

9. **As to claim 2**, Ben-Shachar and Emens do not teach port number, IP address. However, JR teaches port number, IP address (port number, IP address, page 3 of 16, ln 9-11/page 10 of 16, ln 20-21/ page 6 of 16, ln 14-16).

10. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens and JR because JR's port number, IP address would improve the efficiency of Ben-Shachar and Emend's systems by allowing a client to be able to invoke a method on a remote object.

11. **As to claim 9**, Ben-Shachar teaches a load balance algorithm upon creation of a naming service cluster to perform name service load balancing of object references contained within the clusters (col 11, ln 1-6 and ln 12-17).

12. Claims 10, 12, 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1), as applied to claim 1 above, and further in view of Arno (load balancing example).

13. **As to claims 10, 12, 13,** Ben-Shachar and Emens do not teach load balance based on predetermined method that is a Round robin. However, Arno teaches load balance based on predetermined method that is a Round robin (load balancing strategy like round robin, page 1, ln 27-28).

14. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens and Arno because Arno's load balancing strategy like round robin would improve the integrity of Ben-Shachar and Emens's systems by allowing a good tool to increase the performance of load balancing.

15. Claims 15, 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1) in view of Rawson et al (US. Patent 5,675,795) and further in view of Nelson et al (US. Patent 5,452,447).

16. **As to claim 15,** Ben-Shachar teaches a cluster (the set of service locator, col 19, ln 51-55/ the service locator object, col 21, ln 60-65), a context (an RDBMS service, col 5, ln 65-67), invoking a cluster (col 6, ln 3-5), performing a load balance to select an object server located in the invoked cluster (col 6, ln 12-17), establishing name service clusters (col 6, ln 45-46/ col 19, ln 65-67), a unique object table (the RDBMS service, col 5, ln 65-67 to col 6, ln 1-5), object service

server reference( the name “ RDBMS service”/ a service name / a set of properties for service, col 6, ln 1-10), establishing name service clusters for the object servers which each contain a unique object binding table( col 5, ln 65-67 to col 6, ln 1-10/ col 9, ln 26-32), in response to a request from client that invokes a cluster( col 9, ln 30-34/ col 11,ln 2-7/ col 12, ln 22-29), performing a load balance by having name service select an object server located in the invoked cluster (col 6, ln 12-17/ col 10, ln 62-66/ col 11, ln 3-7), a load babance (workload balancing, col 11, ln 12-18), a cluster component to invoked cluster to provide failover upon failure of the object server (col 3, ln 34-40/ col 21, ln 60-65/ col 28, ln 35-39 and ln 54-58), a selected object reference ( the service object handles, col 6, ln 5-9/col 8, ln 63-67/ reservation context, col 26, ln 22-30), forwarding a selected object reference to a client upon completion of the loading balance ( col 6, ln 5-9/col 8, ln 63-67/ col 11, ln 8-15), server( server 88, Fig. 3), forwarding a selected object reference to a client( col 5, ln 60-67 to col 6, ln 3-9/ col 8, ln 63-67), communicating with a server associated with the selected object reference( col 9, ln 30-34/ col 10, ln 39-42/ col 26, ln 23-30).

17. Ben-Shachar does not teach table as binding table. However, Emens teaches binding table-binding table (address list 36, col 8, ln 52-54).

18. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar and Emens because Emens’s permitting the client to communication with the server associated with the selected object reference which was forwarded to the clients would improve the efficiency of Ben-Shachar’s system by allowing load balancing is accomplished without problems arise from client or name server caching.

19. Ben-Shachar and Emens do not teach setting a flag to activate implicit clustering.

However, Rawson teaches a flag to activate implicit clustering (name service –a flag indicating that the file is a name server, col 6, ln 22-25).

20. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens and Rawson because Rawson's a flag to activate implicit clustering would improve the efficiency of Ben-Shachar and Emens's systems by providing an improved data processing system.

21. Ben\_shachar, Emens and Rawson do not teach flag in a file. However, Nelson teaches flag in a file (file flag, col 17, ln 25-26).

22. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens, Rawson and Nelson because Nelson's file flag would improve the use of Ben-Sharchar, Emens and Rawson's systems by providing results of caching operating.

23. **As to claim 16**, Nelson teaches a configuration file (col 14, ln 1-10).

24. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1), in view of Rawson et al (US. Patent 5,675,795) in view of Nelson et al (US. Patent 5,452,447), as applied to claim 15, and further in view of JR (java Reflective Broker).

25. **As to claim 17**, Ben-Shachar, Emens, Rawson and Nelson do not teach port number, IP address. However, JR teaches port number, IP address (port number, IP address, page 3 of 16, ln 9-11/page 10 of 16, ln 20-21/ page 6 of 16, ln 14-16).

26. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens, Rawson, Nelson and JR because JR's port number, IP address would improve the flexibility of Ben-Shachar, Emens, Rawson and Nelson's systems by allowing a client to be able to invoke a method on a remote object.

27. Claims 18-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens( US. Patent 6,606,643 B1), in view of Rawson et al (US. Patent 5,675,795) in view of Nelson et al (US. Patent 5,452,447), as applied to claim 15 above, and further in view of Arno (load balancing example).

28. **As to claims 18, 19**, Ben-Shachar, Emens, Rawson and Nelson do not teach load balance based on predetermined method that is a Round robin. However, Arno teaches load balance based on predetermined method that is a Round robin (load balancing strategy like round robin, page 1, ln 27-28).

29. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens, Rawson, Nelson and Arno because Arno's load balancing strategy like round robin would improve the efficiency of Ben-Shachar, Emens, Rawson, Nelson 's system by allowing a good tool for increasing the performance of load balancing.

30. Claims 20, 21, 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-Shachar et al (US. Patent 6,209,018 B1) in view of Emens et al (US. Patent 6,606,643 B1) in view of Rawson et al (US. Patent 5,675,795) in view of Nelson et al (US. Patent 5,452,447), as applied to claim 1 above, and further in view of Nessett et al (US. Patent 5,742,759).

31. **As to claim 20**, Ben-Shachar, Emens, Rawson and Nelson do not teach object reference binding having identical names is clustered together. However, Nessett teaches object reference binding having identical names is clustered together (bind group identification to a target object, col 3, ln 15-17).

32. It would have been obvious to one of the ordinary skill in the art at the time the invention was made to combine the teaching of Ben-Shachar, Emens, Rawson, Nelson and Nessett because Nessett's bind group identification to a target object would improve the efficiency of Ben-Shachar, Emens, Rawson and Nelson's systems by avoiding the costly transaction costs of communicating with the server for the target object.

33. **As to claim 21**, Ben-Shachar teaches a loading balance algorithm to perform load balancing of object references (col 11, ln 12-16).

34. **As to claim 22**, it is apparatus claim of claim 19; therefore, it is rejected for the same reason as claim 19 above.

**(10) Response to Argument**

Applicant argued in substance that :

As to the point (1), “ the transparency is simply “ accomplished using a flag located in a file, such as a configuration file [of the naming service], or the like”.

As to the point(2), “ The transparency of Ben-Shachar is completely unrelated to load balancing , fault tolerance, and failover, as expressly recited in the claims 1 and 15”

As to the point(3), “ Ben-Shachar eliminates the standard CORBA Name Service and replaces it with a self-created Service Locator. The fault tolerance and load balancing must be added to the service proxy and thus is not transparent to the application or the developer.

Examiner respectfully disagrees with application’s remarks:

As to the point (1), “ the transparency is simply “ accomplished using a flag located in a file, such as a configuration file [of the naming service], or the like” was not the claims. However, Rawson teaches a flag to activate implicit clustering (name service –a flag indicating that the file is a name server, col 6, ln 22-25) and Nelson teaches flag in a file (file flag, col 17, ln 25-26).

As to the point (2), Ben-Shachar teaches “ the service framework also includes a load balancing manager for balancing workloads among worker/ improving fault tolerance in a distributed object network system (col 3, ln 32-35/ and ln 47-49)/provides all the capabilities of the service framework (e.g. workload balancing, fault tolerance, etc.), (col 8, ln 23-25)/ moreover, the fault tolerance mechanisms performed by the service proxy are completely transparent to the client (col 11, ln 60-64).

As to the point (3), Ben-Shachar teaches the service framework includes and object (CORBA object) called a service locator that maintains the name space of service instances (col 5, ln 64-67)/ the service locator 84 which maintains the name of service instances (col 8, ln 50-55)/ the client's perspective, the client simply request execution of an operation on a serve, and the process of obtaining a worker is transparent to the client, because the service proxy performs the necessary steps to obtain the worker. This approach is advantageous, because this approach encapsulates the framework internals so that client are not required to know anything about the framework internals... this approach advantageously allows the framework to support fault tolerant features such as automatically retrying the request if the original request fails (col 10, ln 3-15)/ the service proxy can retry by re-requesting the service from the service locator. Moreover, the fault tolerance mechanisms performed by service proxy are completely transparent to the client (col 11, ln 60-64). Moreover, since Ben-Shachar teaches the CORBA object used to communication between client and server in the reference of Ben-Shachar (col 5, ln 39-44/ ln 63-67/ fig. 1, 2), the reference inherently met the claim limitation transparency.

For the above reasons, it is believed that the rejection should be sustained.

Respectfully submitted

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